

REMARKS

The Applicants are filing this Amendment and Response in response to an Official Action dated January 17, 2007. At the time of the Official Action, claims 1-20 were pending. In this Response and Amendment, no claims are canceled or added. Accordingly, claims 1-20 are remain currently pending. Claims 1, 8, 14, 15 and 20 are amended.

Objections to the Drawings

In the Office Action, the Examiner objected to the drawings under 37 C.F.R. §1.83(b). Specifically, the Examiner stated, “The drawings are incomplete as they do not illustrate a method as described in claims 8-13 and the computer readable medium as described in claim 20.” Applicants respectfully traverse these objections.

Figures in a patent application are included to facilitate an understanding of the subject matter sought to be patented. *See* 37 C.F.R. §1.81(a)-(b). The drawings may include illustrations which *facilitate an understanding of the invention* (for example flow sheets in cases of processes). 37 C.F.R. §1.81(b) (emphasis added). Conventional features disclosed in the description and the claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (*e.g.*, a labeled rectangular box). 37 C.F.R. §1.83(a). As such, flow charts and block diagrams may be used to illustrate the subject matter sought to be patented with a view towards facilitating the understanding of the subject matter sought to be patented.

Additionally, Applicants respectfully remind the examiner that computer programs are considered patentable subject matter. *See In re Beauregard*, 53 F.3d 1583 (Fed Cir. 1995). Indeed, the *Beauregard* case states directly that “computer programs embodied in a tangible medium...are patentable subject matter under 35 U.S.C. §101.” *Id.* As such, in order to facilitate understanding of the computer programs, block may be used in the figures to show the actions of the computer programs.

It is clear that the current figures do illustrate the method of claims 8-13 and the computer-readable medium of claim 20 and meet the above-stated objectives of facilitating an understanding of the subject matter sought to be protected. Specifically, with respect to independent claim 8, the figures illustrate a method comprising the acts of: “creating a pre-whitened signal by applying a pre-whitening data to a received signal;” (FIG. 2, block 56 “Pre-Whitening Matrix Px”). Additionally, the figures illustrate “detecting a pattern that corresponds to a request for access in the pre-whitened signal;” (FIG. 2, block 58 “Code Matched Filter (CMF)”), and “computing correlation data corresponding to the pattern;” (FIG. 2, block 60 “Correlation Matrix”). Furthermore, the figures illustrate “determining whether the correlation data exceeds a pre0whitening request threshold;” (FIG. 2, block 66 “Max Eigenvalue > Threshold?”), “and indicating that an acknowledgement signal should be transmitted if the pre-whitening request threshold is exceeded.” (FIG. 2, block 60 “Correlation Matrix”).

Furthermore, with respect to claim 20, the figures illustrate a tangible computer-readable medium, comprising: “programming instructions stored on the computer-readable medium for applying pre-whitening data to a received signal to produce a pre-whitened signal;” (FIG. 2,

block 56 “Pre-Whitening Matrix Px”) and “programming instructions stored on the computer readable medium for recognizing a pattern in the pre-whitened signal, the pattern corresponding to a request for access.” (FIG. 2, block 58 “Code Matched Filter (CMF)”). Additionally, the figures illustrate, “programming instructions stored on the computer-readable medium for computing correlation data corresponding to the pattern; (FIG. 2, block 60 “Correlation Matrix”), “and programming instructions stored on the computer-readable medium for determining whether the correlation data exceeds a threshold and for providing an indication if the threshold is exceeded.” (FIG. 2, block 60 “Correlation Matrix”).

Additionally, Applicants respectfully assert that the Examiner is misapplying the rules in making the objection. In objecting to the figures, the Examiner cites to 37 C.F.R. §1.83(b), which states:

When the invention consists of an improvement on an old *machine* the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old *structure*, and also in another view, so much only of the old *structure* as will suffice to show the connection of the invention therewith.

37 C.F.R. §1.83(b) (emphasis added). However, 37 C.F.R. §1.83(b) is directed to *machines and structures*, while claim 8 is directed to a method and claim 20 is directed to a tangible computer-readable medium. Thus, this sub-section does not apply to claims 8-13 and 20. Indeed, it is unclear how the cited section has any bearing whatsoever on the objected figures in view of the claims. For at least the above stated reasons, Applicants respectfully request withdrawal of the objection to the figures under 37 C.F.R. §1.83(b).

The Rejection Under 35 U.S.C. § 103

The Examiner rejected claims 1, 4, 8, 11 and 14 under 35 U.S.C. § 103(a) as being unpatentable over Blanchard et al. (U.S. Patent No. 5,764,690, hereinafter “Blanchard”) in view of Nakada (U.S. Pub. No. 2004/0077357); rejected claims 2, 3, 9 and 10 are being unpatentable over Blanchard and Nakada and further in view of Maeda (U.S. Patent No. 4,926,491); rejected claims 5 and 12 as being unpatentable over Blanchard and Nakada and further in view of Agee et al. (U.S. Pub. No. 2004/0095907, hereinafter “Agee”); rejected claim 6 as being unpatentable over Blanchard and Nakada and further in view of Hudson (U.S. Pub. No. 2001/0033614); rejected claims 7 and 13 as being unpatentable over Blanchard and Nakada and further in view of Shah et al. (U.S. Pub. No. 2006/0109779, hereinafter “Shah”); rejected claims 15 and 18 as being unpatentable over Blanchard and Nakada and further in view of Li et al. (U.S. Patent No. 7,068,628, hereinafter “Li”); rejected claims 16 and 17 as being unpatentable over Blanchard, Nakada and Li and further in view of Maeda; rejected claim 19 are being unpatenatable over Blanchard, Nakada and Li and further in view of Shah; and rejected claim 20 as being unpatentable over Blanchard in view of Nakada and Hudson.

Legal Precedent

The Applicants respectfully traverse these rejections. The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221

U.S.P.Q. 929, 933 (Fed. Cir. 1984). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes *all* of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

Independent claims 1, 8 and 14

With respect to the rejection of claims 1, 4, 8, 11, and 14 under 35 U.S.C. § 103 as being rendered obvious by Blanchard in view of Nakada, the Examiner stated, in pertinent part:

Blanchard fails to disclose the correlation data exceeds a threshold and indicates that an acknowledgement signal should be transmitted if the threshold is exceeded. However, Nakada

discloses an acknowledgment signal should be transmitted if a threshold is exceeded ([0043], lines 2-5). Because the use of an acknowledgment signal allows for more accurate signal reception and processing, it would have been obvious to one skilled in the art at the time of invention to incorporate the threshold acknowledgment signal as disclosed by Nakada into the invention of Blanchard.

Office Action, p. 4.

As amended, independent claim 1 recites *inter alia*, “a threshold detector adapted to determine whether the correlation data exceeds *a pre-whitening request threshold* and indicates that an acknowledgement signal should be transmitted if *the pre-whitening request threshold* is exceeded.” (Emphasis added). As amended, independent claim 8 recites, *inter alia*, “determining whether the correlation data exceeds *a pre-whitening request threshold*; and indicating that an acknowledgement signal should be transmitted if *the pre-whitening request threshold* is exceeded.” (Emphasis added). As amended, independent claim 14 recites, *inter alia*, “means for determining whether the correlation data exceeds *a pre-whitening request threshold* and for providing an indication if *the pre-whitening request threshold* is exceeded. (Emphasis added).

As admitted by the Examiner, “Blanchard fails to disclose that the correlation data exceeds a threshold and indicates that an acknowledgement signal should be transmitted if the threshold is exceeded.” However, Nakada, which does not relate to pre-whitening, fails to disclose determining if correlation data exceeds *a pre-whitening request threshold* and indicating if *the pre-whitening request threshold* is exceeded. Moreover, nothing in Nakada would teach, suggest or illustrate to one of ordinary skill in the art to respond with an acknowledgment based on *anything* to do with a pre-whitening request threshold.

Nakada discloses determining whether a preamble is detected based on whether any one path has a power level exceeding “a preamble threshold.” *See* Nakada, para. 43. However, there is no mention of a pre-whitening request threshold anywhere in Nakada. As such, Nakada fails to obviate the admitted deficiencies of Blanchard. Therefore, Blanchard and Nakada, taken alone or in combination, do not disclose all features of the present claims. Accordingly, Applicants respectfully request withdrawal of the rejection under Section 103 and allowance of claims 1, 8 and 14, as well as all claims dependent therefrom.

Independent claim 15

With respect to the rejection of claim 15 under 35 U.S.C. § 103 as being rendered obvious by Blanchard in view of Nakada and Li, the Examiner stated:

Blanchard fails to disclose the correlation data exceeds a threshold and indicates that an acknowledgment should be transmitted if the threshold is exceeded. However, Nakada discloses an acknowledgement signal should be transmitted if a threshold is exceeded. Because the use of an acknowledgement signal allows for more accurate signal reception and processing, it would have been obvious to one skilled in the art at the time of invention to incorporate the threshold acknowledgement signal as disclosed by Nakada into the invention of Blanchard. Neither Blanchard nor Nakada disclose antenna array that receives a communication signal, however, Li discloses an antenna array that receives a communication signal (fig. 4, RA1...P). A plurality of receiving antennas allows for spatial diversity which increases the reliability of a received signal. Because of this advantage it would have been obvious to one skilled in the art at the time of invention to incorporate the multiple receivers as disclosed by Li into the combined invention of Blanchard and Nakada.

Office Action, pp. 7-8.

As amended, independent claim 15 recites, *inter alia*, “a threshold detector adapted to determine whether the correlation data exceeds a *pre-whitening request* threshold and indicate that an acknowledgement signal should be transmitted if the *pre-whitening request threshold* is exceeded. (Emphasis added).

As admitted by the Examiner, “Blanchard fails to disclose the correlation data exceeds a threshold and indicates that an acknowledgment should be transmitted if the threshold is exceeded.” However, as noted above, Nakada fails to disclose determining whether correlation data exceeds a *pre-whitening request threshold* and indicating that an acknowledgement signal should be transmitted if *the pre-whitening request threshold* is exceeded. Nakada discloses determining whether a preamble is detected based on whether any one path has a power level exceeding “a preamble threshold.” See Nakada, para. 43. Nakada makes no mention, however, of a pre-whitening request threshold. As such, Nakada fails to obviate the admitted deficiencies of Blanchard.

Additionally, Li fails to remedy the above noted deficiencies of Blanchard and Nakada. Specifically, Li is directed to a system that determines and uses channel delay profile estimates to achieve more accurate channel parameter estimation. See Li, col. 2, lines 21-24. However, Li does not disclose a threshold detector adapted to determine whether the correlation data exceeds a *pre-whitening request threshold* and to indicate that an acknowledgement signal should be transmitted if *the pre-whitening request threshold* is exceeded. As such, Blanchard, Nakada and Li, taken alone or in combination, fail to disclose all the features of the claim 15. Accordingly,

Applicants respectfully request withdrawal of the rejection under Section 103 and allowance of claim 15, as well as all claims depending therefrom.

Independent claim 20

With respect to the rejection of claim 20 under 35 U.S.C. § 103 as being obvious based on Blanchard in view of Nakada and Hudson, the Examiner stated:

Blanchard fails to disclose the correlation data exceeds a threshold and indicates that an acknowledgement signal should be transmitted if the threshold is exceeded. However, Nakada discloses an acknowledgement signal should be transmitted if a threshold is exceeded. Because the use of an acknowledgement signals allows for more accurate signal reception and processing, it would have been obvious to one skilled in the art at the time of invention to incorporate the threshold acknowledgement signal as disclosed by Nakada into the invention of Blanchard. Neither Blanchard nor Nakada disclose programming instructions stored on the computer-readable medium for performing the steps above, however, Hudson discloses programming instructions stored on the computer-readable medium for performing signal processing steps. Because computer mediums are well known in the art for ease of implementation of signal processing as disclosed by Hudson into the combined invention of Blanchard and Nakada.

Office Action, p.10.

As amended, independent claim 20 recites, *inter alia*, “programming instructions stored on the computer-readable medium for determining whether the correlation data exceeds a *pre-whitening request threshold* and for providing an indication if the *pre-whitening request threshold* is exceeded. (Emphasis added).

As admitted by the Examiner, “Blanchard fails to disclose the correlation data exceeds a threshold and indicates that an acknowledgment should be transmitted if the threshold is exceeded.” However, as noted above, Nakada fails to disclose a determining if correlation data exceeds *a pre-whitening request threshold* and indicating if *the pre-whitening request threshold* is exceeded. Nakada discloses determining whether a preamble is detected based on whether any one path has a power level exceeding “a preamble threshold.” *See Nakada*, ¶ 43. Nakada makes no mention, however, of a pre-whitening request threshold. As such, Nakada fails to remedy the admitted deficiencies of Blanchard.

Additionally, the Hudson reference fails to overcome the deficiencies of Blanchard and Nakada. Specifically, Hudson is directed to equalization of a communication channel through use of a Wiener filter frequency response mechanism. *See Hudson*, Abstract. However, Hudson does not disclose determining whether correlation data exceeds *a pre-whitening request threshold* and providing an indication if *the pre-whitening request threshold* is exceeded. As such, Blanchard, Nakada and Hudson, taken alone or in combination, fail to disclose all the features of the independent claim 20. Accordingly, Applicants respectfully request withdrawal of the rejection under Section 103 and allowance of claim 20.

The Maeda reference

The Examiner rejected claims 2, 3, 9 and 10 as being obvious over Blanchard and Nakada and further in view of Maeda. However, Applicants respectfully assert that Maeda fails to remedy the above-discussed deficiencies of Blanchard and Nakada with respect to independent claims 1 and 8. Specifically, Maeda fails to disclose determining if correlation data exceeds *a*

pre-whitening request threshold and indicating if *the pre-whitening request threshold* is exceeded. As such, Blanchard, Nakada and Maeda, taken alone or in combination, fail to disclose all features of the independent claims 1 and 8. Accordingly, Applicants respectfully request withdrawal of the Section 103 rejection and allowance of claims 2, 3, 9 and 10 based on their dependency from either claims 1 or 8.

The Agee reference

The Examiner rejected claims 5 and 12 as being obvious over Blanchard and Nakada in further view of Agee. However, Applicants respectfully assert that Agee fails to remedy the above-discussed deficiencies of Blanchard and Nakada with respect to independent claims 1 and 8. Specifically, Agee fails to disclose determining if correlation data exceeds *a pre-whitening request threshold* and indicating if *the pre-whitening request threshold* is exceeded. As such, Blanchard, Nakada and Agee, taken alone or in combination, fail to disclose all features of the independent claims 1 and 8. Accordingly, Applicants respectfully request withdrawal of the Section 103 rejection and allowance of claims 5 and 12 based on their dependency from either claims 1 or 8.

The Shah reference

The Examiner rejected claims 7 and 13 as being obvious over Blanchard and Nakada in further view of Shah. However, Applicants respectfully assert that Shah fails to remedy the above-discussed deficiencies of Blanchard and Nakada with respect to independent claims 1 and 8. Specifically, Shah fails to disclose determining if correlation data exceeds *a pre-whitening request threshold* and indicating if *the pre-whitening request threshold* is exceeded. As such,

Blanchard, Nakada and Shah, taken alone or in combination, fail to disclose all features of the independent claims 1 and 8. Accordingly, Applicants respectfully request withdrawal of the Section 103 rejection and allowance of claims 7 and 13 based on their dependency from either claims 1 or 8.

For at least the reasons set forth above, Applicants assert that Blanchard, Nakada, Li, Hudson, Maeda, Agee, and Shah, taken alone or in any combination, fail to disclose all features of set forth in the independent claims of the present application. As such, Applicants respectfully request the withdrawal of all Section 103 rejection, as well as allowance of independent claims 1, 8, 14, 15 and 20, as well as all claims depending therefrom.

Claim Objections

In the Office Action, the Examiner objected to claim 8. Specifically, the Examiner stated, “Claim 8 is objected to based on the following informalities: Claim 8, line 2, the *acts* should be changed to *steps*. Appropriate correction is required.” Office Action, page 11, section 12 (emphasis in original). Applicants respectfully traverse the objection.

In describing the expression of elements in claims, 35 U.S.C. § 112 uses permissive language. Specifically, it states: “An element in a claim for a combination *may be* expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or *acts* described in the specification and equivalents thereof. 35 U.S.C. § 112 (emphasis added). It may be inferred from the language that the statute clearly allows for terms

other than means or steps to be used. Specifically, for example, the statute may be read to say claims *may be* expressed as a means, steps, *or acts* to cover *acts* disclosed in the specification. In referencing Section 112 and using the term “acts,” Applicants are merely pointing to statutory authority for the use of the term and not intending that the claim be narrowly construed as *only* encompassing “acts.”

Furthermore, the *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, (hereinafter “Interim Guidelines”) published by the United State Patent and Trademark Office on November 22, 2005 state the following:

USPTO personnel should begin claim analysis by identifying and evaluating each claim limitation. For processes, the claim limitations will define steps or *acts* to be performed.

...

35 U.S.C. Sec. 101 defines four catagories [*sic*] of inventions that Congress deemed to be the appropriate subject matter of a patent: processes, machines, manufactures and compositions of matter. The latter three categories define "things" or "products" while the first category defines "actions" (i.e., inventions that consist of a series of steps or *acts* to be performed). See 35 U.S.C. 100(b) ("The term 'process' means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.").

...

A claim that requires one or more *acts* to be performed defines a process.

OG Section II(C), para. 2; Section IV(A), para. 9; Annex II(A)(i), para. 5. (Emphasis added).

In view of the Interim Guidelines and Section 112, it is clear that the term “acts” is an entirely appropriate term used in claims. Moreover, it is a generally accepted term used to describe processes. As such, the Examiner’s objection appears to lack any statutory or

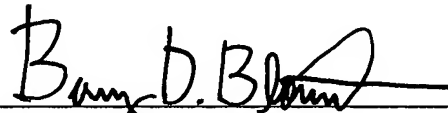
administrative authority. Accordingly, Applicants respectfully request withdrawal of the objection to claim 8.

Conclusion

In view of the remarks set forth above, the Applicants respectfully request reconsideration of the Examiner's rejections and allowance of all pending claims 1-20. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: April 17, 2007

A handwritten signature in black ink, appearing to read "Barry D. Blount", written over a horizontal line.

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